REMARKS

The final Office Action of January 2, 2008 has been carefully reviewed and these remarks are responsive thereto. No further claim amendments have been made. Claims 1 and 3-37 are pending.

Rejections Under 35 U.S.C. § 103

Applicant appreciates the examiner's careful and detailed analysis of the prior art. Nevertheless, in view of the arguments presented herein, reconsideration of the rejections is respectfully requested.

Claims 1, 3, 6, 8-23, and 25-37 stand rejected under 35 U.S.C. § 103 as being unpatentable over Klassen (U.S. Patent No. 6,711,137) in view of Barton (U.S. Pub. No. 2002/0031144). According to the office action, Klassen discloses transmitting test packets over a network during a plurality of different time slots, wherein each test packet has a priority level that is lower than a priority level assigned to data packets that are to be transmitted between endpoints; evaluating which time slots correspond to favorable network traffic conditions; and transmitting data packets at the higher priority level. The office action points to Barton as teaching selection of the best time slots for transmission. The proposed reason for combining Barton with Klassen is "to correctly manage an interconnected set of physical shared digital network segments where the bandwidth between any two nodes may vary, perhaps greatly, from the bandwidth achievable between any other pair of nodes as stated in Barton's paragraph 39." (Office Action at page 4). Applicant respectfully disagrees and requests reconsideration of the rejections.

First, as to independent claims 1, 19, 31, and 37, Klassen does not disclose transmitting test packets at a lower priority level than data packets as claimed. The office action points to Klassen at col. 5 lines 1-8 which mentions nothing about priority levels. The office action also points to Klassen col. 7 at lines 18-27, but this merely discloses sending test packets at different priority levels for different types of test packets, and does not disclose sending test packets at a priority level that is lower than that of data packets transmitted between endpoints as claimed. In other words, in Klassen, test packets for data type (d) (file transfer) are sent at a lower priority level than test packets for data type (c) (interactive data), but nowhere does Klassen disclose sending the actual file transfer packets (which would constitute the "data" packets in Klassen) at a higher level priority level than the test packets for the file transfer packets. In Klassen, each category of test packet is sent at the same priority level as the data packets corresponding to that type of test

packet. As explained in the present specification at paragraph 32 as originally filed (now paragraph 36 as published) and as illustrated in FIG. 7, transmitting test packets at a lower priority level than the corresponding data packets avoids interfering with existing network traffic because the lower-priority queues overflow before the higher-priority queues – in other words, the test packets do not exacerbate network loading problems. In short, Klassen does not disclose or suggest using low-priority traffic to test for congestion of high-priority traffic.

Second, Klassen does not disclose "evaluating which of the plurality of different time slots corresponds to favorable network traffic conditions" as recited in independent claims 1, 19, and 31, nor does it disclose "empirically determining which of the plurality of time slots is associated with a reduced level of packet contention" as recited in independent claim 15 or "identifying one or more time slots that correspond to a low level of contention conditions" as recited in independent claim 37." The office action suggests that in col. 17 lines 50-52, Klassen's mention of "best network time" is somehow related to the claimed feature of evaluating which of a plurality of different time slots corresponds to favorable network traffic conditions. At most, Klassen's single number is the "best" (i.e., lowest) response time in the network, but it is not calculated with reference to any time slot as claimed. In other words, at best Klassen evaluates macro-level network statistics, not time slot-level statistics as claimed.

Third, neither Klassen nor Barton discloses the feature recited in independent claims 1, 19, 31, and 37 of transmitting data packets using one or more favorable time slots evaluated in a previous step, nor the feature recited in independent claim 15 of transmitting data packets during one or more time slots empirically determined to be associated with a reduced level of packet contention. The office action again points to the same portion of Klassen (col. 17 lines 50-52), but as pointed out above this global network response time has nothing to do with individual time slots on the network as claimed. The citation to col. 2 at lines 57-60 of Klassen merely refers to "a need for testing for the presence of network prioritization support and, if present, measuring network utilization and performance by means of discrete pings set at varying priorities." The remaining citations to Klassen (col. 4 lines 55-65; col. 5 lines 1-8; and col. 7 lines 18-27) similarly have nothing to do with the claimed features.

Applicant has also carefully studied the cited paragraphs 23, 76, and 86 of Barton (which the office action suggests teaches transmitting packets over the network during a plurality of favorable different time slots) but can find nothing even remotely suggesting the features as

claimed. For convenience, these cited paragraphs from Barton are reproduced below in their entirety:

> [0023] One embodiment of the invention provides a simple means by which any device can present a sequenced stream of packets to a network for transmission and have those packets sent at precisely specified times. This function is implemented with minimal additional hardware in each network node, thereby reducing or eliminating added cost.
>
> [0076] FIG. 5 depicts a representative list of allocation records 501. An example allocation record 502 defines a window of time 503 on the network, according to the values in the allocation record as described above. The allocation records are listed in order according to their start times, and the start time plus duration of any allocation record can not overlap the start time of the next record.
>
> [0086] This method of managing packet transmission achieves the goals of the invention. It is not dependent on the bandwidth of the network (which may be incalculable) or any shared segment thereof, and allows for efficient switching of the network between streaming and contention-based access without central control. It requires that the source node knows the bandwidth at which a packet can be sent to the destination node. This bandwidth is easily determined in a number of different ways. For example, upon first transmission of a packet to a node, a timed exchange of a fixed-size probe packet with the destination node would allow direct calculation of the bandwidth. Alternatively, a node-to-node bandwidth table might be made available to the software by some external means, even through manual entry.

Barton merely relates to allocating packets to be transmitted at specified times (paragraph 23) based on a reserved allocation scheme (paragraphs 90 to 96). In short, neither reference, whether alone or combined, teaches or suggests testing different time slots and then sending data over those tested time slots that are determined to be favorable.

Fourth, the office action fails to provide a cogent rationale for combining Klassen with Barton. The office action states that both Klassen and Barton "utilize probe test packets to select best network times" (Office Action at page 4). As explained above, Klassen uses test packets to obtain network-level statistics. Barton nowhere discloses the use of test packets to select "network times;" the "probe packet" mentioned in paragraph 86 is used solely to estimate a

bandwidth between two endpoints. As discussed above, Klassen also doesn't teach testing during time slots. The statement on page 4 of the office action that "The motivation for transmitting a plurality of favorable different time slots to correctly manage an interconnected set of physical shared digital network segments where the bandwidth between any two nodes may vary, perhaps greatly, from the bandwidth achievable between any other pair of nodes as stated in Barton's paragraph 39 [sic]" appears to be nothing more than a cut-and-pasted statement of one of Barton's "objects of the invention," without any relevance to the claimed invention or the combination of Barton with Klassen.

Indeed, it would counterintuitive and disruptive to use test packets in the system of Barton to test time slots that had already been allocated for use. Sending test packets during previously allocated and used time slots would impact the traffic sent in those slots, thus disrupting the network. Accordingly, no proper rationale for the combination has been shown if anything, Barton teaches away from the proposed combination.

Sixth, even if combined, Klassen and Barton would not disclose the claimed features. The office action states on page 3 that Barton teaches transmitting data packets during favorable different time slots and that it also shows the use of probe test packets to select time slots (pointing to paragraph 86 of Barton). In fact, Barton does not teach sending packets during previously evaluated favorable time slots. In Barton, "time slots" are either assigned or not assigned, and the system of Barton selects only non-assigned time slots for data packets without have previously evaluated them for favorable network traffic conditions as claimed. Moreover, Barton does not send "probe" packets to select time slots. The only reference to "probe" packets mentioned in the office action appears in paragraph 86, which refers to a "probe" packet used to estimate the bandwidth between two points before any time slots are established.

As to independent claim 15, page 8 of the Office Action asserts that Barton discloses the claimed step of synchronously transmitting data packets during time slots empirically determined to be associated with reduced levels of packet congestion in paragraphs 88, 101, and 102. Paragraph 88 merely refers to "proper synchronization." Paragraphs 101 and 102 refer to transmitting allocation records between all endpoints. Nowhere is the claimed feature of synchronous transmission during empirically determined time slots disclosed or suggested – as explained above, in Barton all the time slots are either allocation or unallocated – there is no empirical determination of time slot desirability. And, as explained above, there is no proper

rationale for combining the network-level statistics of Klassen with the allocation scheme of Barton.

As to dependent claim 21, which recites "transmitting the test packets at a data rate that exceeds an expected data rate for packets that are to be transmitted between two network endpoints on the network," the office action incorrectly states on page 6 that "The support in the specification only states sending test packets at a higher or lower priorities [sic] compared to the data packets and Klassen adequately teaches this limitation in Columns in [sic] 2:57-60, 4:55-65, 5:1-8 and 7:18-27. Examiner assumes Applicant believes higher priority implies higher data rate and is basing support using some level of logic found in the specification."

In fact, the present specification at paragraph 29 as originally filed (now paragraph 33 as published) clearly explains the feature as recited in claim 21, which was pointed out on page 14 of the response to the last office action. There is no basis for confusing "higher data rate" with "higher priority" as was done in the office action. The office action then refers to Gail as alternatively disclosing such a feature, but claim 21 was not rejected based on Gail, and the office action identifies no specific portion of Gail that would teach or suggest the feature as claimed. Accordingly, the rejection of dependent claim 21 is not proper.

As to dependent claims 34 and 36, which recite the feature that the data packets comprise "time-division multiplex (TDM) data converted into IP packets," a feature described in paragraph 21 of the present specification as originally filed (paragraph 23 as published), Applicant has carefully studied the portions of Klassen cited on pages 7 and 13 of the office action but can find no teaching or suggestion of this feature. These passages merely mention "TCP/IP pings;" "connection-oriented modes" and other types of data packets. The term "TDM" (for Time Division Multiplex) has a well-known meaning in the art can cannot be used interchangeably with TCP/IP and other packet-switched protocols.

Conclusion

Based on the foregoing, Applicant respectfully submits that the application is in condition for allowance and requests that the rejections be reconsidered.

Respectfully submitted,

BANNER & WITCOFF, LTD.

Dated this 14th day of February, 2008 By: /Bradley C. Wright/

Bradley C. Wright
Registration No. 38,061

1100 13th Street, N.W.
Washington, D.C. 20005
Tel: (202) 824-3160
Fax: (202) 824-3001